

ATTACHMENT B

REMARKS

By this amendment, Applicants have amended the claims in a manner which now places this application in condition for allowance. In particular, the independent claims of the application have been amended to more distinctly claim the present invention in a manner which clearly distinguishes the invention from the cited prior art and in such a manner to avoid any objections to the language of the claims. The claims include only those additions which are disclosed with regard to the embodiments of the invention as set forth in pages 4-5 in particular, and thus these claims are supported in all cases by the original disclosure. Upon entrance of the present amendment, the application will be placed in condition for allowance for at least the following reasons.

In the Official Action, the Examiner rejected Claims 1, 15 and 16 as being anticipated by the Li US patent 5,783,495. This rejection is respectfully traversed in that the Examiner asserted that Li et al. disclose a ratio of an etch rate of a boron silicate glass film (BSG) or boron etching solution phosphosilicate glass / an etch rate of thermal oxide film (THOX) at 25°C of 10 or higher. Specifically, the rate is equal to 10.5 (= 378 Åmin⁻¹/36 Åmin⁻¹). Upon entrance of the present amendment, the present invention as embodied in Claim 1 is now directed to an etching solution whose ratio is 20 or higher (much higher than 10.5). Accordingly, the present claims are not disclosed or suggested in the Li et al. reference, and the Examiner's rejection under 35 U.S.C. § 102(b) is respectfully traversed and should be withdrawn.

In the Official Action, the Examiner also rejected Claims 2 and 3 under 35 U.S.C. § 103(a) as being unpatentable over the Li et al. patent and further in view of the Grant

et al. U.S. Pat. No. 5,439,553. The Examiner also rejected Claims 4-10 on the basis of Li and Grant and Bartens U.S. Pat. No. 3,968,565. Next the Examiner rejected Claims 11-13 under 35 U.S.C. 103(a) as being unpatentable over Li and further in view of McNeilly et al. U.S. Pat. No. 5,294,568. Finally, the Examiner rejected Claim 14 under 35 U.S.C. § 103 as being unpatentable over Li and further in view of the Wanless U.S. Pat. No. 3,997,381. These rejections, insofar as applied to the claims upon entrance of the present amendments, are respectfully traversed for the reasons that follow.

Li et al. provide a cleaning solution with an etch selectivity ratio of less than 4:1 (preferably 2:1, moreover about 0.5:1) for a doped/deposited oxide:thermal/native oxide etch (see column 4, lines 48-56 of Li et al.). More specifically, Li et al. decrease etch selectivity between doped/deposited oxide and thermal/native oxide by adding etch reducing agent such as ammonium compounds ((R)₄NOH).

In contrast, the invention provides an etching solution in which a ratio of an etch rate of a boron silicate glass film (BSG) or boron phosphosilicate glass / an etch rate of a thermal oxide film (THOX) at 25°C is 20 or higher.

Li et al. disclose a cleaning solution whose selectivity ratio is less than 4:1 and also 10.5 as a specific example. It is impossible to prepare an etching solution of the present invention with an etch selectivity ratio of more than 20:1.

Li et al. and the present invention are thus antithetical to each other, and it clear that Li does not disclose or suggest the present claims.

Grant et al. disclose a gas-phase oxide etching method, not a liquid phase etching of the invention using an etching solution. According to Grant et al., the condensation of reactants and other contaminants on the oxide surface is either

prevented, or more precisely controlled (see column 3, lines 41-43). Grant et al. do not disclose an etching solution for wet etching of the invention but disclose gas-phase etching.

Therefore, Grant cannot be added to Li to make the present invention obvious, and the Examiner's rejection on the basis of this combination of references is respectfully traversed.

Finally, it is clear that neither the McNeilly et al. U.S. Pat. No. 5,294,568 nor the Wanless U.S. Pat. No. 3,997,381 disclose or suggest the present invention, and thus these references also cannot be combined with the Li reference to anticipate or make obvious the present invention. Accordingly, the Examiner's rejections on the basis of these references are respectfully traversed and should be withdrawn.

In light of the amendments and arguments as set forth above, Applicants submit that upon entrance of the present amendments, the application will overcome all prior rejections and will be placed in condition for allowance. Entrance of the amendment and allowance of this application is thus earnestly solicited.

END REMARKS